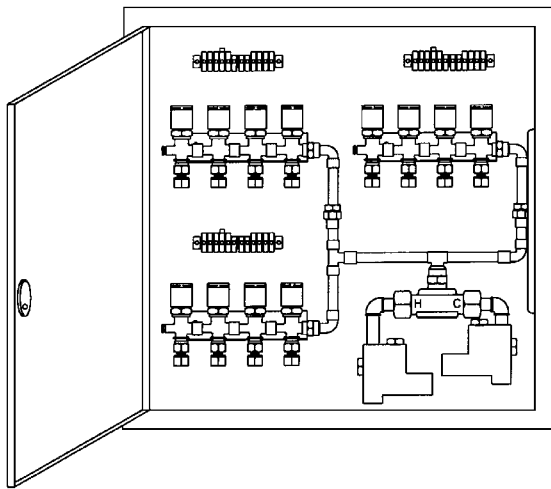


# Installation

## 12TMAR

Recess-Mounted Cabinet with Mixing Valve and 12 Solenoids (Illinois Box)

*For Service Only*



**12TMAR (Part No. S86-085)**

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## IMPORTANT!



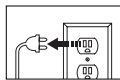
Read this entire installation manual to ensure proper installation, then file this manual with the owner or maintenance department. Compliance and conformity to local codes and ordinances is the responsibility of the installer.



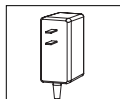
Pressurized plumbing fixtures must be installed in accordance with manufacturer's recommendations. The supply piping to these devices must be securely anchored to the building structure to prevent unnecessary movement of the installed device when operated by the user. Use extreme caution when installing the device to prevent damage to the exposed significant surface. When drilling into masonry or other hard materials to install wall and floor anchors, be sure to wear safety goggles.



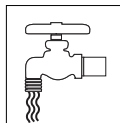
Separate parts from packaging and make sure all parts are accounted for before discarding any packaging material. If any parts are missing, do not begin installation until you obtain the missing parts.



To avoid personal injury and/or damage to the unit, turn OFF electrical power to the outlet before beginning installation.



An optional transformer may be used in conjunction with the 900 Series Futura faucets. Refer to the installation manual for remote transformer mounting instructions. One transformer operates up to four faucets at one time. Additional transformer(s) are required for installations with more than four faucets.



Flush water supply lines, then turn the water supply OFF before beginning installation. DO NOT use pipe dope on any faucet or supply connections. Possible solenoid contamination could occur which will void any warranty. Teflon tape is the recommended sealant. The installation requires a water flowing pressure of at least 20 PSI but no greater than 80 PSI.



Product warranties may be found under "Product Information" on our web site at [www.bradleycorp.com](http://www.bradleycorp.com).

# Installation Instructions

## Supplies required for installation:

- 1/2" NPT hot and cold water supply piping and fittings
- 100-120 VAC power source and electrical connectors
- 100-120 VAC/24 VAC transformer (supplied by installer or available from Bradley as an option)
- 1/4" copper or plastic tubing and 18-gage two-conductor lamp cord

## Step 1: Install Cabinet

1. Mount each faucet to your deck following the installation instructions provided with the faucets.
2. Rough-in hot and cold 1/2" NPT water supply to the cabinet's thermostatic mixing valve location (see Figure 1 for dimensions).
3. Rough-in a 20-3/4" W x 20-3/4" H x 4-1/4" D hole in the wall for the cabinet (see Figure 1).
4. Insert the cabinet into the wall opening using the four #10 x 1" Phillips pan head screws provided (wall anchors, if required, supplied by installer).
5. Make 1/2" NPT supply connections to the thermostatic mixing valve (piping and fittings supplied by installer) (see Figure 1).

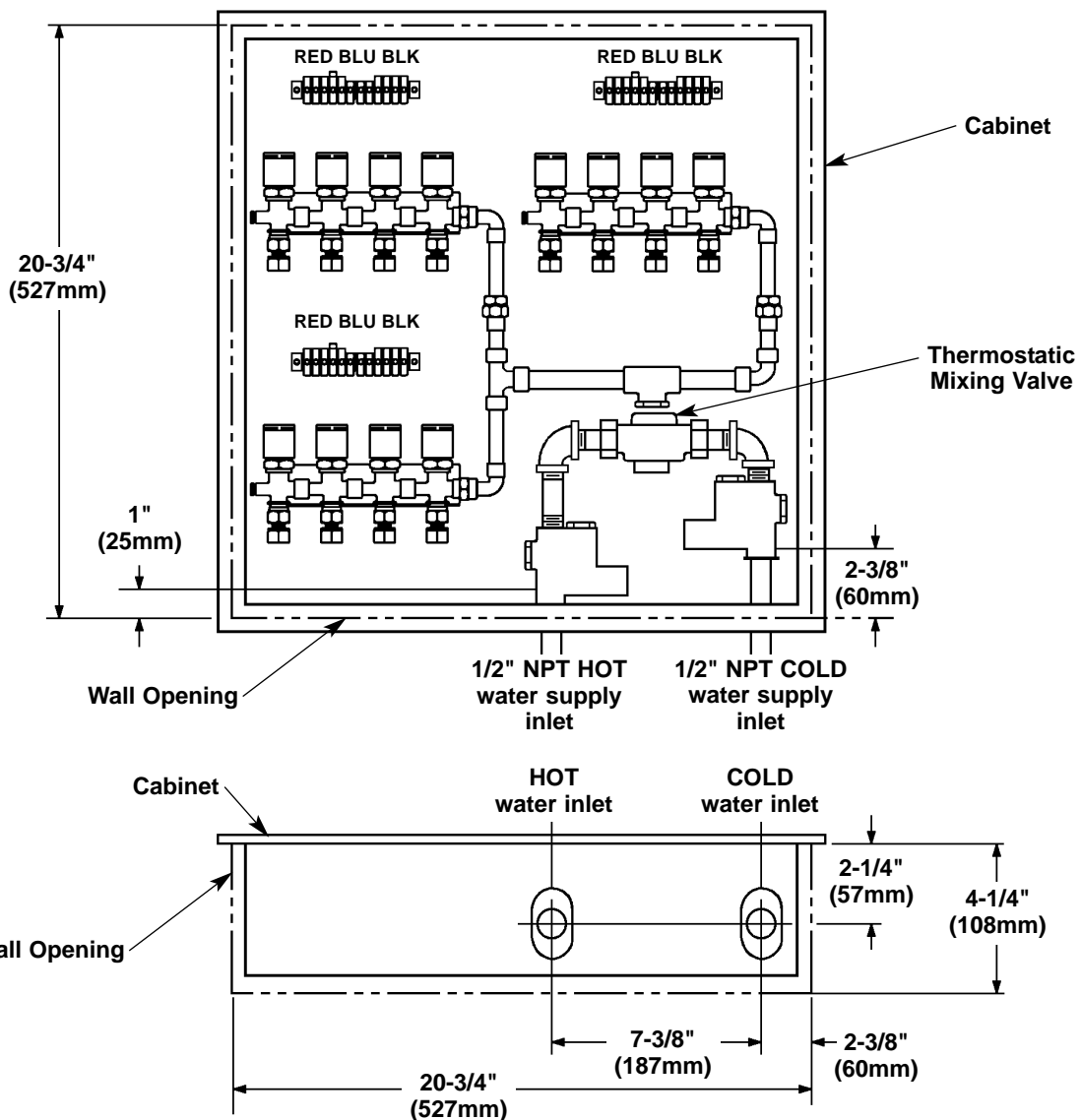


Figure 1

# Installation Instructions

## Step 2: Connect Tubing and Wiring from Faucets

*NOTE: Refer to Figure 2 for 900 Series Futura faucets when replacing tubing and wiring connections. Figure 1 on page 2 illustrates components that are pre-wired and provided with the cabinet. Additional wire and tubing supplied by installer.*



**WARNING: Your Bradley faucet must be connected with a 24 VAC transformer. Connection to 100-120 VAC can result in personal injury and will result in damage to the sensor. Connection to leads other than shown may also cause damage to the sensor.**

1. Install a 100-120 VAC/24 VAC transformer per local code.
2. Insert 1/2" O.D. plastic tubing from each faucet into the female connector [6" (152 mm) of tubing provided with faucet—additional tubing supplied by installer]. Cut tubing squarely as required. **DO NOT** crush end of tubing. Tube end must be square to obtain a good seal with the tailpiece fitting. Make sure the tube is inserted completely.

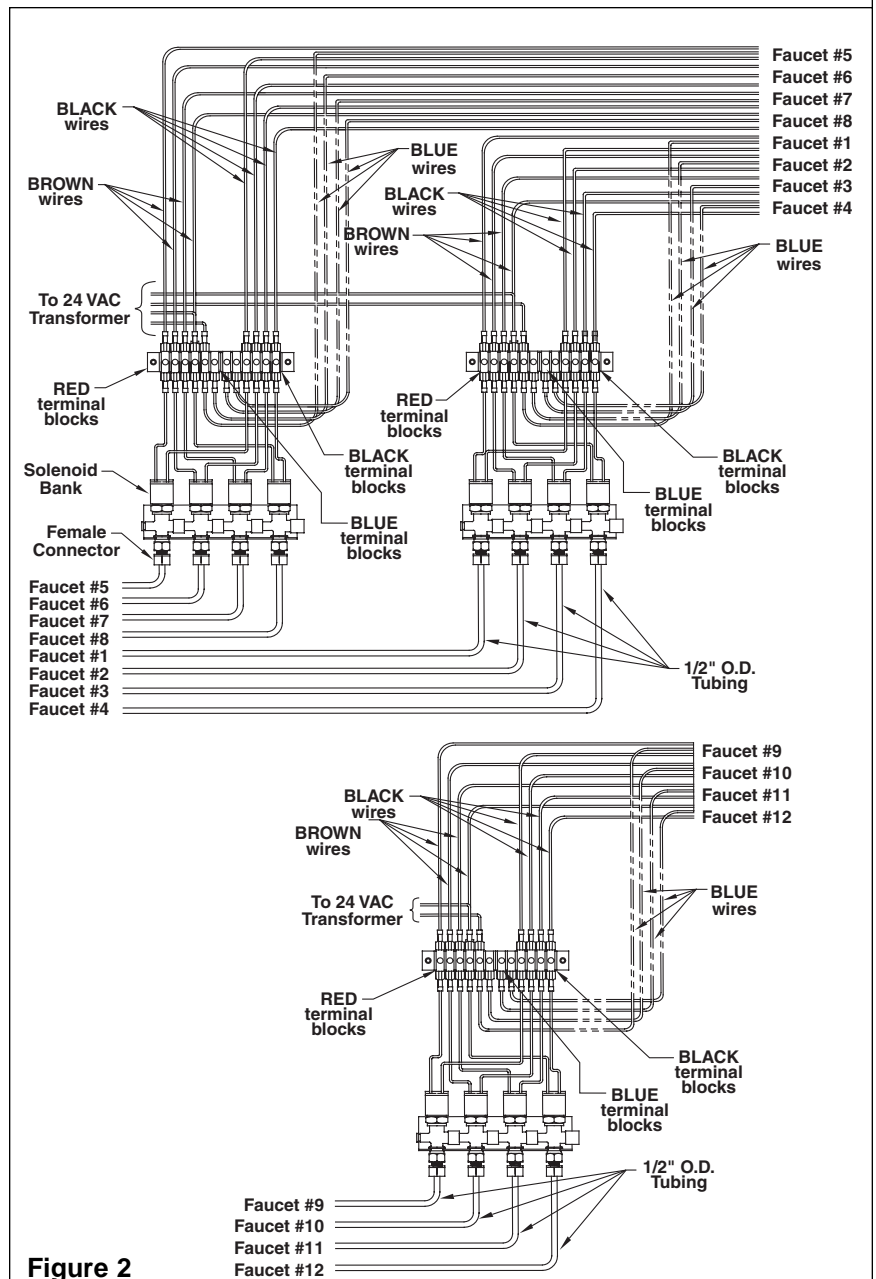


**IMPORTANT: When making electrical connections, ensure each faucet is wired to the terminal block connected to the matching solenoid valve as shown in Figure 2.**

3. Make electrical connections from the 24 VAC transformer and each faucet to the terminal block following the appropriate wiring diagram.

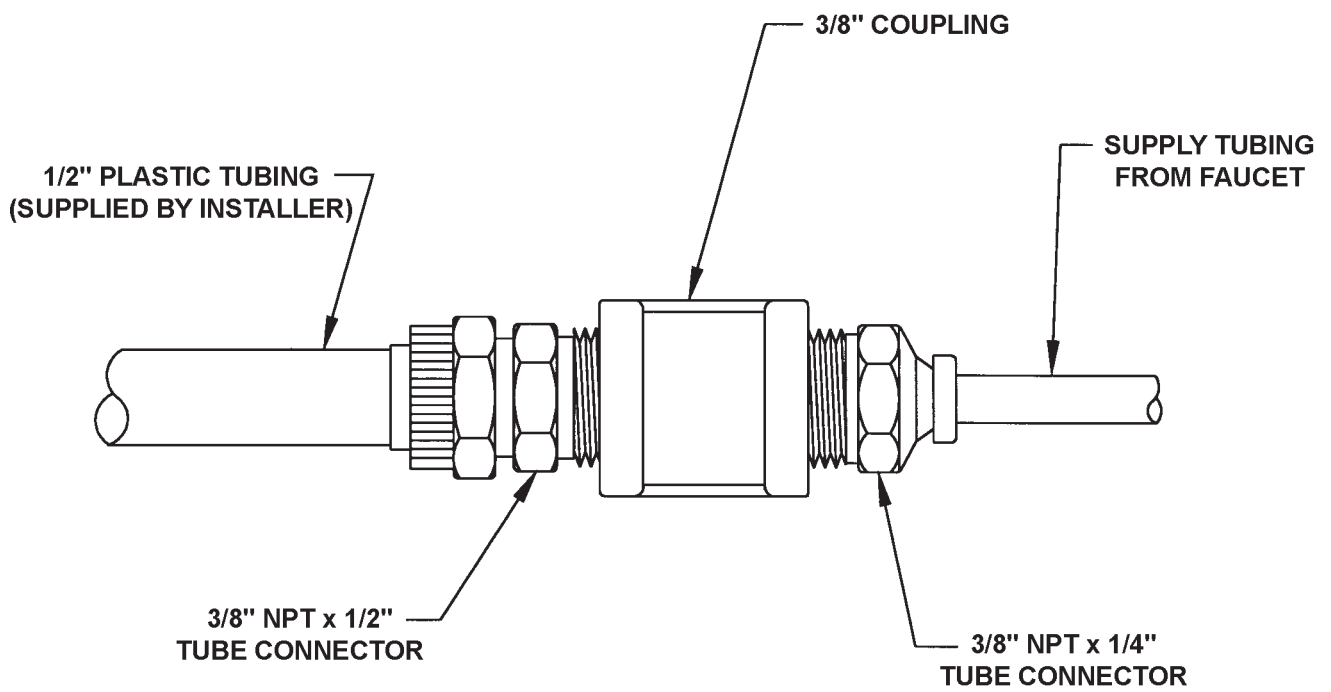
*NOTE: Twenty inches (508 mm) of wire is provided with each faucet. If additional wire is required, use 18-gage two-conductor lamp cord (supplied by installer).*

4. Complete installation and testing following the installation instructions provided with faucet.



**Figure 2**

# FAUCET FITTINGS



# Vernatherm™ Mixing Valve Maintenance and Service

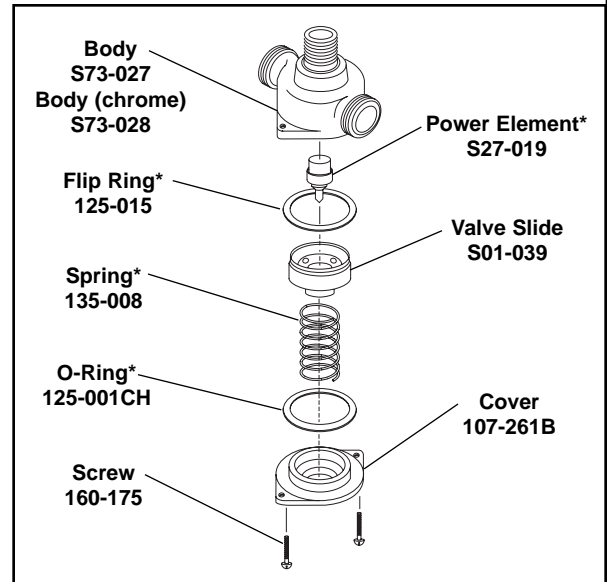
\*Repair kit S45-049 is pre-packaged and includes O-Ring, Flip Ring, Power Element and Spring.

## Maintenance Instructions

1. Disassemble the Vernatherm™ Valve as shown, being careful not to damage the power element. Replace the element, if necessary.
2. If necessary, remove the old flip ring and replace with a new ring.

*NOTE: An old or worn flip ring may cause temperature fluctuation and/or water chatter.*

3. Reassemble the power element and valve body. Apply grease to the main valve slide and gently ease into position, rotating so that grease is applied to the flip ring. Do not force the slide as this may push the flip ring from its position. To test, rotate the slide; a slight drag should be felt when correctly installed.
4. Reassemble the valve.



## Service Suggestions

When servicing the valve, make sure it is installed in the correct position. The most common error occurs when the valve is installed in the reversed position, that is, the hot line is connected to the cold line and the cold is connected to the hot.

*NOTE: A red marking indicates the hot side of the valve.*

The table below lists conditions that occur when the valve is installed correctly, and when it is in the reversed position.

IF			THEN
Valve Position is	Hot Supply	Cold Supply	Valve Delivers
Correct	Hot	Cold	Mixed 107°
Correct	Hot	No Water	Valve shuts off or drips
Correct	No Water	Cold	Valve shuts off or drips
Correct	Hot	Hot	Hot
Correct	Cold	Cold	Cold
Reversed	Hot	Cold	Cold/below 107° Hot/above 107°
Reversed	Hot	No Water	Hot
Reversed	No Water	Cold	Cold
Reversed	Hot	Hot	Hot
Reversed	Cold	Cold	Cold